What is Claimed is:

1. A diagnostic link system for communicating data between modems using multicarrier modulation comprising:

an initiate diagnostic mode trigger that instructs a transmitting modem to forward an initiate diagnostic mode message to a receiving modem;

a message determination device that determines a diagnostic link message; and

a receiving modem diagnostic device that receives the diagnostic link message and determines the accuracy of the diagnostic link message.

2. The system of claim 1, further comprising a power control device that increases a transmission power of the diagnostic link message if the received diagnostic link message is inaccurate.

3. The system of claim 1, wherein the diagnostic link message is re-transmitted at least one time.

4. The system of claim 1, wherein the diagnostic link message comprises at least one of test and diagnostic information.

5. The system of claim 4, wherein the diagnostic link message comprises at least one of a version number of a diagnostic link mode, a length of the diagnostic information, a communications standard, a chipset type, one or more vendor identifications, an ATU version number, a time domain received reverb signal, a frequency domain reverb signal, an amplifier setting, a CO transmitter power spectral density, a frequency domain received idle channel, a signal to noise ratio, bits and gain information, and upstream and downstream transmission rates.

6. The system of claim 1, wherein the accuracy is determined based on at least one of an error detecting scheme, a bit error detection and a cyclic redundancy check.

7. The system of claim 1, wherein the trigger is based on at least one of an initialization failure, a bit rate failure, a CRC error in an initialization message, a CRC error during a normal steady state transmission mode, a forward error correction error, a user request, a central office modem request and a remote terminal modem request.

8. The system of claim 1, wherein the transmitting modem completes a portion of a modem initialization sequence before forwarding the initiate diagnostic mode message.

9. The system of claim 1, wherein the transmitting modem is at least one of a central office modem and a remote terminal modem.

10.   The system of claim 1, wherein the receiving modem is at least one of a central office modem and a remote terminal modem.

11.   A method for communicating data between modems using multicarrier modulation comprising:

instructing a transmitting modem to forward an initiate diagnostic mode message to a receiving modem;

determining a diagnostic link message;

transmitting the diagnostic link message; and

determining the accuracy of the transmitted diagnostic link message.

12.   The method of claim 11, further comprising increasing a transmission power of the diagnostic link message if a received diagnostic link message is inaccurate.

13.   The method of claim 11, further comprising re-transmitting the diagnostic link message at least one time.

14.   The method of claim 11, wherein the diagnostic link message comprises at least one of test and diagnostic information.

15.   The method of claim 14, wherein the diagnostic link message comprises at least one of a version number of a diagnostic link mode, a length of the diagnostic information, a communications standard, a chipset type, one or more vendor identifications, an ATU version number, a time domain received reverb signal, a frequency domain reverb signal, an amplifier setting, a CO transmitter power spectral density, a frequency domain received idle channel, a signal to noise ratio, bits and gain information, and upstream and downstream transmission rates.

16.   The method of claim 11, wherein the accuracy is determined based on at least one of an error detecting scheme, a bit error detection and a cyclic redundancy check.

17.   The method of claim 11, wherein the initiate diagnostic mode message is based on at least one of an initialization failure, a bit rate failure, a CRC error in an initialization message, a CRC error during the normal steady state transmission mode, a forward error correction error, a user request, a central office modem request and a remote terminal modem request.

18.   The method of claim 11, further comprising completing a portion of a modem initialization sequence before forwarding the initiate diagnostic mode message.

19.   The method of claim 11, wherein the transmitting modem is at least one of a central office modem and a remote terminal modem.

20.   The method of claim 11, wherein the receiving modem is at least one of a central office modem and a remote terminal modem.

21.   A method for communicating data between modems using multicarrier modulation comprising:

receiving an initiate diagnostic mode message;

determining a diagnostic link message;

transmitting the diagnostic link message; and

at least one of increasing a transmission power of the diagnostic link message if the received diagnostic link message is inaccurate and re-transmitting the diagnostic link message at least one time.

22.   The method of claim 21, wherein the diagnostic link message comprises at least one of test and diagnostic information.

23.   The method of claim 22, wherein the diagnostic link message comprises at least one of a version number of a diagnostic link mode, a length of the diagnostic information, a communications standard, a chipset type, one or more vendor identifications, an ATU version number, a time domain received reverb signal, a frequency domain reverb signal, an amplifier setting, a CO transmitter power spectral density, a frequency domain received idle channel, a signal to noise ratio, bits and gain information, and upstream and downstream transmission rates.

24.   The method of claim 21, wherein the accuracy is determined based on at least one of an error detecting scheme, a bit error detection and a cyclic redundancy check.

25.   The method of claim 21, wherein the initiate diagnostic mode message is based on at least one of an initialization failure, a bit rate failure, a CRC error in an initialization message, a CRC error during the normal steady state transmission mode, a forward error correction error, a user request, a central office modem request and a remote terminal modem request.

26.   The method of claim 21, further comprising completing a portion of a modem initialization sequence before forwarding the initiate diagnostic mode message.

27.   The method of claim 21, wherein a transmitting modem is at least one of a central office modem and a remote terminal modem.

28.   The method of claim 21, wherein a receiving modem is at least one of a central office modem and a remote terminal modem.

29.   A method for communicating data between modems using multicarrier modulation comprising:

receiving an initiate diagnostic mode message;

determining the accuracy of a received diagnostic link message; and

receiving at least one of an increased transmission power diagnostic link message if the received diagnostic link message is inaccurate and a re-transmission of at least one of the diagnostic link messages.

30.   The method of claim 29, wherein the diagnostic link message comprises at least one of test and diagnostic information.

31.   The method of claim 30, wherein the received diagnostic link message comprises at least one of a version number of a diagnostic link mode, a length of the diagnostic information, a communications standard, a chipset type, one or more vendor identifications, an ATU version number, a time domain received reverb signal, a frequency domain reverb signal, an amplifier setting, a CO transmitter power spectral density, a frequency domain received idle channel, a signal to noise ratio, bits and gain information, and upstream and downstream transmission rates.

32.   The method of claim 29, wherein the accuracy is determined based on at least one of an error detecting scheme, a bit error detection and a cyclic redundancy check.

33.   The method of claim 29, wherein the initiate diagnostic mode message is based on at least one of an initialization failure, a bit rate failure, a CRC error in an initialization message, a CRC error during the normal steady state transmission mode, a forward error correction error, a user request, a central office modem request and a remote terminal modem request.

34.   The method of claim 29, further comprising completing a portion of a modem initialization sequence before receiving the initiate diagnostic mode message.

35.   An information storage media comprising information for communicating data between modems using multicarrier modulation comprising:

information that instructs a transmitting modem to forward an initiate diagnostic mode message to a receiving modem;

information that determines a diagnostic link message;

information that transmits the diagnostic link message; and

information that determines the accuracy of the transmitted diagnostic link message.

36.   An information storage media comprising information for communicating data between modems using multicarrier modulation comprising:

information that receives an initiate diagnostic mode message;

information that determines a diagnostic link message;

information that transmits the diagnostic link message; and

information that at least one of increases a transmission power of the diagnostic link message if the received diagnostic link message is inaccurate and re-transmits the diagnostic link message at least one time.

37.   An information storage media comprising information for communicating data between modems using multicarrier modulation comprising:

information that receives an initiate diagnostic mode message;

information that determines the accuracy of a received diagnostic link message; and

information that receives at least one of an increased transmission power diagnostic link message if the received diagnostic link message is inaccurate and a re-transmission of at least one of the diagnostic link messages.

38.   A method for communicating diagnostic information between DSL modems using multicarrier modulation comprising:

completing a portion of a modem initialization sequence;

transmitting an initiate diagnostic communication mode message to a receiving modem;

entering a diagnostic communications mode based on at least one of an initialization failure, a bit rate failure, a CRC error in an initialization message, a CRC error during the normal steady state transmission mode, a forward error correction error, a user request, a central office modem request and a remote terminal modem request; and

transmitting a diagnostic link message comprising at least one of a version number of a diagnostic link mode, a length of the diagnostic information, a communications standard, a chipset type, one or more vendor identifications, an ATU version number, a time domain received reverb signal, a frequency domain reverb signal, an amplifier setting, a CO transmitter power spectral density, a frequency domain received idle channel, a signal to noise ratio, bits and gain information, and upstream and downstream transmission rates.

39.   The method of claim 38, further comprising re-transmitting the diagnostic link message at least one time.

40.   The method of claim 38, further comprising increasing a transmission power of the diagnostic link message.

41.   A method for communicating diagnostic information between DSL modems using multicarrier modulation comprising:

completing a portion of a modem initialization sequence;

receiving an initiate diagnostic communication mode message;

entering a diagnostic communications mode based on at least one of an initialization failure, a bit rate failure, a CRC error in an initialization message, a CRC error during the normal steady state transmission mode, a forward error correction error, a user request, a central office modem request and a remote terminal modem request;

receiving a diagnostic link message comprising at least one of a version number of a diagnostic link mode, a length of the diagnostic information, a communications standard, a chipset type, one or more vendor identifications, an ATU version number, a time domain received reverb signal, a frequency domain reverb signal, an amplifier setting, a CO transmitter power spectral density, a frequency domain received idle channel, a signal to noise ratio, bits and gain information, and upstream and downstream transmission rates.

42.   The method of claim 41, further comprising receiving a re-transmitted diagnostic link message at least one time.

43.   The method of claim 41, further comprising receiving an increased transmission power diagnostic link message.